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Spurling, Norman

From: Steeger, Thomas
Sent: Wednesday, March 19, 2014 5:20 PM
To: Spurling, Norman
Subject: Bee Kill Incident Report
Attachments: Beekill Incident report_Anonymous_California Almonds (03_15_2014).docx

Attached please find a bee kill incident report from California. The beekeeper reporting the incident wished to remain anonymous. If you have any questions or concerns, please let me know.

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A bee kill incident was reported to the EPA Office of Pesticide Programs' Environmental Fate and Effects Division on Saturday, March 15, 2014. The report was submitted by a anonymous commercial beekeeper who indicated that on February 25, 2014, he started to notice dead honey bees at the entrances to his colonies; on March 8, 2014, his crew started to notice dead brood in colonies that they were hoping to split (*i.e.*, establish new colonies). The loss occurred in Merced County, California, where as many of 7,800 colonies were on contract for pollination services in six almond orchards operated by a single grower. According to the beekeeper, the orchard operator applied a tank mix of the fungicide Pristine® (boscalid and pyraclostrobin) and the insect growth regulator Intrepid® (methoxyfenozide) to almond orchards during the period of February 20 – 26, 2014. The applications were during the day when bees were actively foraging in almond orchards that were at full bloom; applications were also made at night.

The tank mix was applied using ground equipment (airblast; Aerofans) which the beekeeper indicated is sufficiently forceful that it incapacitates bees in the field to the point that they cannot return to their hive and those that do return have visible signs of chemical residues (referred to as "burned bees"). The tank mix was reported to have been by the orchard operator in preceding years and has historically resulted in dead bees around the entrance of colonies with bees continuing to discard affected bees from the colonies for several days after exposure. However, losses in previous years were not as large as those observed this year. According to the beekeeper, drought conditions in California this year rendered the almond trees as the primary source of pollen and nectar for his bees; therefore, the bees may have been more prone to exposure from the airblast applications this year. As a result of the most recent exposure though, dead bees have been observed at hive entrances and several generations of brood have failed to mature/emerge (*i.e.*, dying in the process of emerging) leading to the depopulation of the hives as older worker bees die from normal attrition and are not replaced. The beekeeper reported varying degrees of effect from barely noticeable to severe hive depopulation and elimination of brood; 80% of the colonies are reported to have noticeable brood and adult loss. Colonies that appeared to be less affected were believed to have been located in areas were applications were made later in the day or in the evening when fewer bees would be foraging. According to the beekeeper, impacts from the spray application have become more evident every day that passes, as old bees are dying and there are not enough young bees hatching to replace them. Hives that graded 17 frames prior to bloom probably would not make 12 frames now. Unexposed colonies that graded lower prior to bloom are in better condition now than exposed hives that previously graded higher. The depopulation of hives and the loss of brood has limited the beekeeper's ability to make splits, produce nucleus colonies, and replenish losses.

The beekeeper provided a link[1] to a registrant's advertisement for Lorsban® Advanced (chlorpyrifos) and Intrepid® 2F and noted that the latter product is advertised as being safe for bees; however, the product is intended to kill insects in the larval stage and that is what it is doing to bee brood. The beekeeper did not consider the damage to his hives to be the fault of the grower since the grower used the product according to the label and had no intention of harming the bees or their crop. The beekeeper considered the losses the fault of the manufacturer and ultimately the EPA. According to the beekeeper, the product [Intrepid®] is mislabeled and misbranded. He indicated that the pesticide was likely never tested on bee larvae, but rather on adults; since it kills insects in metamorphic stages, adult bees are immune. The beekeeper indicated that it is important to get the word out regarding the use of this product when bees are foraging and its effect on bee colonies so as to prevent such incidents in the future.

[1] http://msdssearch.dow.com/PublishedLiteratureDAS/dh_088b/0901b8038088bad6.pdf?filepath=/010-32891.pdf&fromPage=GetDoc